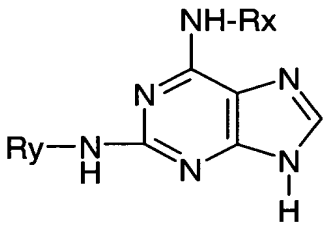
CLAIMS

1) A method of treating or preventing fungal diseases which comprises administering to a subject in need thereof an effective amount to treat or prevent said fungal infection of a compound of formula (I):



(I)

in which:

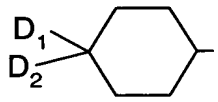
Rx is $-(Z)_n-R_1$ wherein

Z is a divalent radical selected from $-CH_2-$, $-SO_2-$, -CO-, -COO-, -CONH- and $-(CH_2)_2-NR_6-$,

n is the an integer selected from 0 and 1,

R_1 is selected from hydrogen, aryl, $-CH_2$-aryl, $-SO_2$-aryl, heterocyclic, $-CH_2$-heterocyclic, alkyl and $-SO_2$-alkyl,

Ry is a phenyl radical (optionally substituted) or the radical:



wherein D_1 and D_2, which are identical or different, are selected from hydrogen, hydroxyl, the linear or branched alkyl or alkoxy radicals containing at most 6 carbon atoms and NHR_5, or, alternatively, taken together, D_1 and D_2 form a radical selected from =O and $=N-OR_4$,

R_4 is hydrogen, alkyl, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, cycloalkyl or aryl,

R_5 is hydrogen, alkyl, cycloalkyl, or -COOtBu (Boc),

R_6 is hydrogen, alkyl or cycloalkyl, wherein the alkyl moiety contains 1 to 6, optionally substituted, carbon atoms;

it being understood that:

all cycloalkyl radicals described hereinabove contain at most 6 carbon atoms, and that

all alkyl radicals described hereinabove are linear or branchedand contain at most 6 carbon atoms (unless otherwise specified), and that

all the cycloalkyl, alkyl, aryl, phenyl and heterocyclic radicals described hereinabove are optionally substituted with one or more radicals selected from halogen, hydroxyl, cyano,

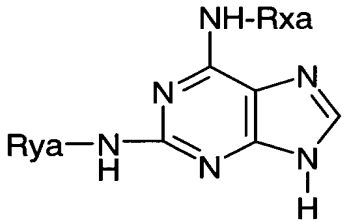
nitro, trifluoromethyl, trifluoromethoxy and alkoxy, said alkoxy radicals containing at most 6 carbon atoms,as well as the radicals with an acid functional group and acid isosteres and the radicals -NHR_4, NR_4R_4', -COR_4, -$COOR_4$ and -$CONHR_4$ in which R_4 has the meaning indicated above and R_4', which is identical to or different from R_4, is selected from the values of R_4,

all the aryl and heterocyclic radicals defined above being furthermore optionally substituted with one or more alkyl or phenylalkyl radicals in which the alkyl radicals contain at most 6 carbon atoms,

all the aryl radicals defined above being furthermore optionally substituted with a dioxol radical,

said compounds of formula (I) being in any of the possible isomeric forms, the racemic, enantiomeric and diastereoisomeric forms, and the pharmaceutically acceptable addition salts with inorganic and organic acids or with inorganic and organic bases of said compounds of formula (I).

2) The method as defined in claim 1, wherein the compounds of formula (I) as defined in claim 1 correspond to formula (Ia):



(Ia)

in which:

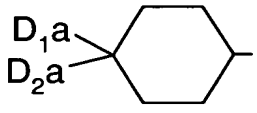
Rxa represents –(Za)n-R_1a wherein

Za represents the divalent radical -CH_2-, -SO_2-, -CO- or -$(CH_2)_2$-NR_6a-,

n represents the integer 0 or 1,

R_{1a} is selected from hydrogen, phenyl, -CH_2-phenyl, -SO_2-phenyl, pyridyl, -CH_2-pyridyl, alkyl, -SO_2-alkyl and piperidinyl,

Rya represents phenyl (optionally substituted) or the radical:



wherein D_1a and D_2a, which are identical or different, are selected from hydrogen, hydroxyl, linear or branched alkyl and alkoxy containing at most six carbon atoms, and NHR_5a, or, alternatively, D_1a and D_2a, taken together, forma group selected from =O and =N-OR_4a,

R_4a is hydrogen,alkyl, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, cycloalkyl or phenyl,

R_5a is hydrogen, alkyl, cycloalkyl or -COOtBu (Boc),

R_6a is hydrogen, alkyl containing at most 4 carbon atoms or cycloalkyl containing at most 6 optionally substituted carbon atoms,

all the cycloalkyl radicals defined above containing at most 6 carbon atoms,

all the alkyl radicals defined above being linear or branched containing at most 6 carbon atoms,

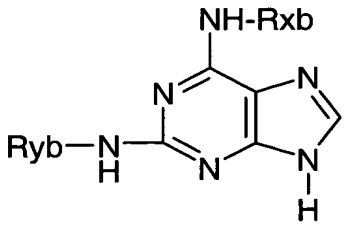
all the cycloalkyl, alkyl, phenyl and piperidinyl radicals defined above being optionally substituted with one or more radicals selected from halogen, hydroxyl, cyano, nitro, trifluoromethyl, trifluoromethoxy, alkoxy containing at most 6 carbon atoms, $-NHR_4a$, NR_4aR_4a', $-COR_4a$, $-COOR_4a$ and $-CONHR_4a$ in which R_4a has the meaning indicated above, and R_4a', which is identical to or different from R_4a, is selected from the values of R_4a,SO_3H, $PO(OH)_2$, $NH-SO_2-CF_3$, $NH-SO_2-NH-V$ and $NH-SO_2-NH-CO-V$ in which V is phenyl, alkyl or alkenyl , the alkyl and alkenyl groups being linear or branched, and containing at most 6 carbon atoms,

all the phenyl and piperidinyl radicals defined above being furthermore optionally substituted with one or more groups selected from alkyl and phenylalkyl in which the alkyl contains at most 6 carbon atoms,

the phenyl radicals defined above being furthermore optionally substituted with a dioxol radical,

said compounds of formula (Ia) being in any of the possible isomeric forms, the racemic, enantiomeric and diastereoisomeric forms, and the addition salts with inorganic and organic acids or with inorganic and organic bases of said products of formula (Ia).

3) The method as defined in claim 1 wherein the compounds of formula (I) as defined in claim 1 correspond to formula (Ib):



(Ib)

in which:

Rxb is $-(Zb)n-R_1b$ wherein

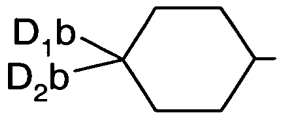
Zb is a divalent radical selected from $-CH_2-$, $-SO_2-$, -CO- and $-(CH_2)_2-NR_6b-$,

n is the integer 0 or 1,

R_1b is selected from hydrogen, phenyl, $-CH_2$-phenyl, $-SO_2$-phenyl, pyridyl, $-CH_2-$

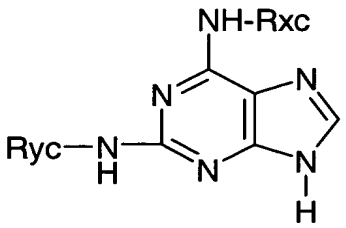
pyridyl, alkyl, -SO_2-alkyl and piperidinyl,
in which the alkyl group contains at most 4 carbon atoms and the alkyl and phenyl and piperidinyl groups are optionally substituted as indicated below,

Ryb is optionally substituted phenyl or :



wherein D_1b and D_2b , which are identical or different, are selected from hydrogen, hydroxyl, linear or branched alkyl and alkoxy containing at most 4 carbon atoms and NHR_5b, or, alternatively, D_1b and D_2b together form =O or =N-OR_4b,
R_4b is hydrogen, alkyl, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, in which each alkyl portion contains at most 4 carbon atoms, phenyl, –CH_2-phenyl or cycloalkylcontaining at most 6 carbon atoms optionally substituted with -NHR_6b,
R_5b is hydrogen, alkyl or cycloalkyl containing at most 6 carbon atoms or -COOtBu (Boc),
R_6b is hydrogen, alkyl containing at most 4 carbon atoms, cycloalkyl containing at most 6 carbon atoms or –CH_2-phenyl,
all the cycloalkyl, alkyl, phenyl and piperidinyl radicals defined above being optionally substituted with one or more of halogen,s hydroxyl, cyano, nitro, trifluoromethyl, trifluoromethoxy, alkoxy containing at most 4 carbon atoms, unsubstituted, salified or esterified carboxyl, -NHR_4b, NR_4bR_4b', -COR_4b and -$CONHR_4b$ in which R_4b has the meaning indicated above and R_4b', which is identical to or different from R_4b, is selected from the values of R_4b and SO_3H, $PO(OH)_2$ and NH-SO_2-CF_3,
all the phenyl and piperidinyl radicals defined above being furthermore optionally substituted with one or more of alkyl and phenylalkyl radicals in which the alkyl radicals contain at most 4 carbon atoms,
the phenyl radicals defined above being furthermore optionally substituted with a dioxol radical,
said compounds of formula (Ib) being in any of the possible isomeric forms, the racemic, enantiomeric and diastereoisomeric forms, and the addition salts with inorganic and organic acids or with inorganic and organic bases of said compounds of formula (Ib).

4) The method as defined in claim 1, wherein the compounds of formula (I) as defined in claim 1 correspond to formula (Ic):



(Ic)

in which:

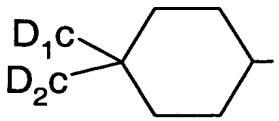
Rxc is –(Zc)n-R_1c wherein

Zc is a divalent radical selected from -CH_2-, -SO_2-, -CO-, -$(CH_2)_2$-NH-,-$(CH_2)_2$-N-alkyl,-$(CH_2)_2$-N-CH_2-phenyl, in which the phenyl radical is optionally substituted with halogen, hydroxyl, trifluoromethyl, alkoxy containing at most 4 carbon atoms and unsubstituted, salified or esterified carboxyl,

n is the integer 0 or 1,

R_1c is selected from hydrogen, phenyl, -CH_2-phenyl, -SO_2-phenyl, pyridyl, alkyl, -SO_2-alkyl, and piperidinyl, optionally substituted on the nitrogen atom with alkyl, phenylalkyl or carboxyl esterified with an alkyl radical, it being understood that all said alkylsmay be linear or branched, contain at most 4 carbon atoms and are optionally substituted with an unsubstituted, salified or esterified carboxyl radical, and all the phenyls are optionally substituted with one or more of halogen,hydroxyl, cyano, trifluoromethyl, nitro, trifluoromethoxy, alkyl and alkoxy containing at most 4 carbon atoms, dioxol, unsubstituted, esterified or salified carboxyl, -NHR_4c, NR_4cR_4c· and -$CONHR_4$c in which R_4c is hydrogen, alkyl containing at most 4 carbon atoms or cyclohexyl optionally substituted with NH_2, and R_4c', which is identical to or different from R_4c, is selected from the values of R_4c,

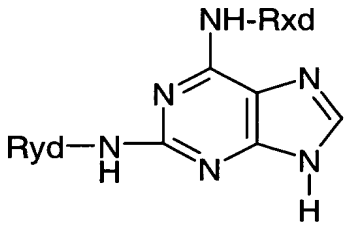
Ryc is either phenyl, optionally substituted with amino, alkylamino, dialkylamino, nitro, carboxyl which is unsubstituted, salified or esterified with an alkyl containing at most 4 carbon atoms, or:



wherein D_1c and D_2c, which are identical or different, are selected from hydrogen, hydroxyl, linear and branched alkyl and alkoxy radicals containing at most 4 carbon atoms, -NH_2, -NH-COOtBu and –NH-alkyl in which the linear or branched alkyl radical contains at most 4 carbon atoms, or, alternatively, D_1c and D_2c together form =O or =N-O-alkyl, in which the alkyl is linear or branched and contains at most 4 carbon atoms,

said products of formula (Ic) being in all the possible isomeric forms, the racemic, enantiomeric and diastereoisomeric forms, and the addition salts with inorganic and organic acids or with inorganic and organic bases of said products of formula (Ic).

5) The method as defined in claim 1, wherein the compounds of formula (I) as defined in claim 1 correspond to formula (Id):



(Id)

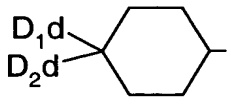
in which:

Rxd is –(Zd)n-R_1d wherein Zd is a divalent radical selected from -CH_2- and -$(CH_2)_2$-NH-,

n is the integer 0 or 1,

R_1d is selected from hydrogen and the radicals phenyl, -CH_2-phenyl, pyridyl, alkyl and piperidinyl, optionally substituted on the nitrogen with alkyl, phenylalkyl or carboxyl that is esterified with alkyl, it being understood that, in all these cases,the alkyl radicals are linear or branched, contain at most 4 carbon atoms and are optionally substituted with an unsubstituted, salified or esterified carboxyl radical, and all the phenyl radicals are optionally substituted with one or more of halogen, hydroxyl, cyano, trifluoromethyl, trifluoromethoxy, alkyl and alkoxy containing at most 4 carbon atoms, dioxol, unsubstituted, esterified or salified carboxyl, -NHR_4c, NR_4cR_4c' and -$CONHR_4$c in which R_4c is hydrogen, alkyl containing at most 4 carbon atoms orcyclohexyl optionally substituted with NH_2, and R_4c', which is identical to or different from R_4c, is selected from the values of R_4c,

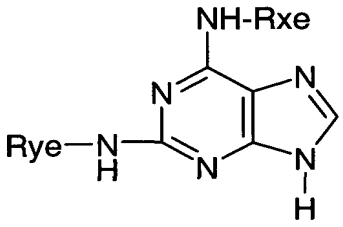
Ryd is either phenyl, optionally substituted with amino, alkylamino, dialkylamino, nitro or carboxyl which carboxyl is unsubstituted, salified or esterified with an alkyl containing at most 4 carbon atoms, or:



wherein D_1d and D_2d, which are identical or different, are selected from hydrogen, hydroxyl, linear and branched alkyl and alkoxy containing at most 4 carbon atoms, -NH_2, -NH-COOtBu and –NH-alkyl in which the linear or branched alkyl contains at most 4 carbon atoms, or, alternatively, D_1d and D_2d together form =O or =N-Oalkyl, in which the alkyl is linear or branched and contains at most 4 carbon atoms,

said compounds of formula (Id) being in all the possible isomeric forms, the racemic, enantiomeric and diastereoisomeric forms, and the addition salts with inorganic and organic acids or with inorganic and organic bases of said compounds of formula (Id).

6) The method as defined in claim 1 wherein the compounds of formula (I) as defined in claim 1 correspond to formula (Ie):



(Ie)

in which:

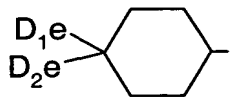
Rxe is $-(Ze)_n-R_1e$ wherein

Ze is $-CH_2-$ or $-(CH_2)_2-NH-$,

n is 0 or 1,

R_1e is selected from hydrogen, phenyl, $-CH_2$-phenyl, alkyl and piperidinyl, optionally substituted on the nitrogen atom with alkyl, or carboxyl esterified with an alkyl or phenylalkyl, it being understood that, in all these cases, phenyl is optionally substituted with one or more of halogen, hydroxyl, trifluoromethoxy, alkoxy containing at most 4 carbon atoms, amino, alkylamino, dialkylamino, acyl containing at most 4 carbon atoms, and carboxyl that is unsubstituted, salified or esterified with an alkyl containing at most 4 carbon atoms, itself optionally substituted with amino, alkylamino, dialkylamino or with a carboxyl amidated with an amino, alkylamino, dialkylamino or phenylamino,

Rye is either phenyl optionally substituted with one or more of amino, alkylamino, dialkylamino, nitro and carboxyl which is unsubstituted, salified or esterified with an alkyl containing at most 4 carbon atoms, or:



wherein D_1e and D_2e are different from each other, one being hydrogen, and the other being $-NH_2$ wherein one or both of the hydrogens may be substituted with-COOtBu or –alkyl, which is linear or branched and contains at most 4 carbon atoms, said compounds of formula (Ie) being in all the possible isomeric forms, the racemic, enantiomeric and diastereoisomeric forms, and the addition salts with inorganic and organic acids or with inorganic and organic bases of said products of formula (Ie).

7) A compound selected from the group consisting of:

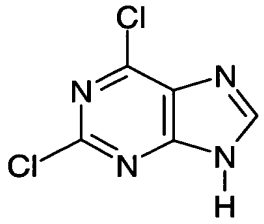
- ethyl trans-4-[[2-[(4-aminocyclohexyl)amino]-1H-purin-6-yl]amino]benzoate dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-(2-aminoethyl)-1H-purine-2,6-diamine trihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-propyl-1H-purine-2,6-diamine dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-(phenylmethyl)-1H-purine-2,6-diamine dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-(4-methoxyphenyl)-1H-purine-2,6-diamine dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-[4-(trifluoromethoxy)phenyl]-1H-purine-2,6-diamine dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-[1-(phenylmethyl)-4-piperidinyl]-1H-purine-2,6-diamine trihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-[2-[(phenylmethyl)amino]ethyl]-1H-purine-2,6-diamine trihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-[(3,4-dimethoxyphenyl)methyl]-1H-purine-2,6-diamine;
- trans-N2-(4-aminocyclohexyl)-1H-purine-2,6-diamine dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-[4-phenyl]-1H-purine-2,6-diamine dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-(4-fluorophenylmethyl)-1H-purine-2,6-diamine;
- trans-N2-(4-aminocyclohexyl)-N6-[1-(ethoxycarbonyl)-4-piperidinyl]-1H-purine-2,6-diamine;
- ethyl trans-3-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzoate;
- trans-N2-(4-aminocyclohexyl)-N6-(4-chlorophenyl)-9H-purine-2,6-diamine;
- trans-N2-(4-aminocyclohexyl)-N6-(3,4-dichlorophenyl)-9H-purine-2,6-diamine;
- butyl trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzoate;
- 2-(diethylamino)ethyl trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzoate;
- trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]-N-phenylbenzamide;
- trans-N2-(4-aminocyclohexyl)-N6-[4-(dimethylamino)phenyl]-9H-purine-2,6-diamine;
- trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzaldehyde;
- trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzamide;
- ethyl 4-[[2-[[4-(ethoxycarbonyl)phenyl]amino]-9H-purin-6-yl]amino]benzoate;
- ethyl 4-[[2-[(3-nitrophenyl)amino]-9H-purin-6-yl]amino]benzoate;
- ethyl 4-[[2-[(3-aminophenyl)amino]-9H-purin-6-yl]amino]benzoate;
- ethyl 4-[[2-[[(4-dimethylamino)phenyl]amino]-9H-purin-6-yl]amino]benzoate;

- ethyl 4-[[2-(cyclohexylamino)-9H-purin-6-yl]amino]benzoate; and
- ethyl 4-[[2-[[3-(ethoxycarbonyl)phenyl]amino]-9H-purin-6-yl]amino]benzoate.

8) A compound of claim 7 selected from the group consisting of:

- ethyl trans-4-[[2-[(4-aminocyclohexyl)amino]-1H-purin-6-yl]amino]benzoate dihydrochloride;
- trans-N2-(4-aminocyclohexyl)-N6-[4-phenyl]-1H-purine-2,6-diamine dihydrochloride;
- ethyl trans-3-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzoate;
- trans-N2-(4-aminocyclohexyl)-N6-(3,4-dichlorophenyl)-9H-purine-2,6-diamine;
- butyl trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzoate;
- 2-(diethylamino)ethyl trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]benzoate; and
- trans-4-[[2-[(4-aminocyclohexyl)amino]-9H-purin-6-yl]amino]-N-phenylbenzamide.

9) A method for preparing a compound of formula (I), as defined in claim 1, wherein a compound of formula (II):



(II)

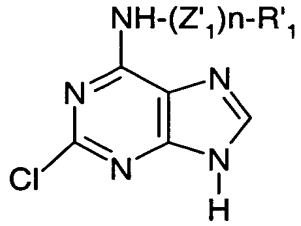
is reacted according to any one of routes 1 to 6 as follows:

route 1: a compound of formula (II) is reacted with a compound of formula (V):

$$NH_2\text{-}(Z_1')n\text{-}R_1' \qquad (V)$$

in which R_1' has the meaning indicated in claim 1 for R_1, in which the possible reactive functional groups are optionally protected with protecting groups, and n is 0 or 1 and, when n is 1, then Z_1' is $-CH_2$,

in order to obtain a compound of formula (VIII):

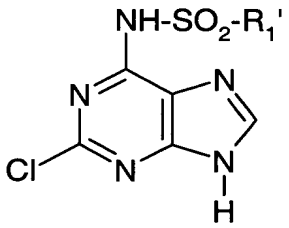


(VIII)

in which R_1' and Z_1' have the meanings indicated above; orroute 2: the compound of formula (II) is reacted with a compound of formula (VI):

NH_2-SO_2-R_1' (VI)

in which R_1' has the meaning indicated in claim 1 for R_1, in which the possible reactive functional groups are optionally protected with protecting groups,
in order to obtain a compound of formula (IX):

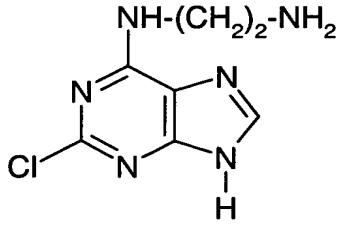


(IX)

in which R_1' has the meaning indicated above; or
route 3: the compound of formula (II) is reacted with the compound of formula (VII):

NH_2-$(CH_2)_2$-NH_2 (VII)

in order to obtain a compound of formula (X):

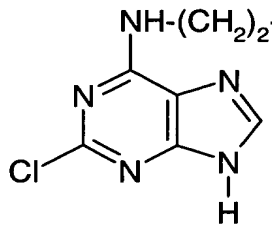


(X)

which compound of formula (X) is
either reacted with a compound of formula (XI):

Cl-SO_2-R_1' (XI)

in which R_1' has the meaning indicated above,
in order to obtain a compound of formula (XII):

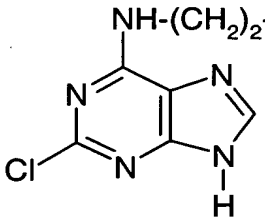


(XII)

in which R_1' has the meaning indicated above,
or reacted, in the presence of a reducing agent, with a product of formula (XVII):

R_7-CHO (XVII)

in which R_7 is aryl, heterocyclic or alkyl as defined in the definition for R_1 in claim 1 in which the possible reactive functional groups are optionally protected,
in order to obtain a compound of formula (XIII):

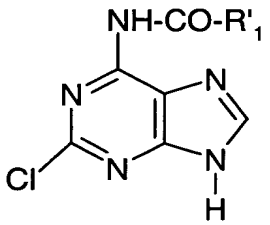


(XIII)

in which R_7 has the meaning indicated above; or
route 4: the compound of formula (II) is reacted with a compound of formula (XVIII):

R_1'-CO-NH_2 (XVIII)

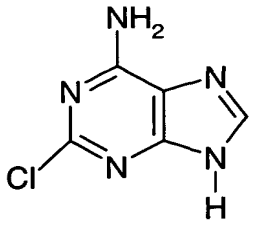
in which R_1' has the meaning indicated above,
in order to obtain a compound of formula (M_1):



(M_1)

in which R_1' has the meaning indicated above; or
route 5: the compound of formula (IV) is reacted with ammonia in order to obtain a

compound of formula (XIX):

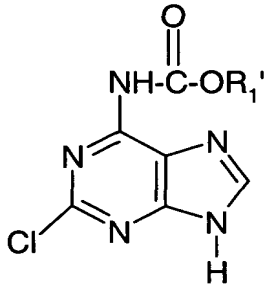


(XIX)

which compound of formula (XIX)is, according to route 5, reacted with a compound of formula (XX):

$ClCOOR_1'$ (XX)

in which R_1' has the meaning indicated above,
in order to obtain a compound of formula (M_2):

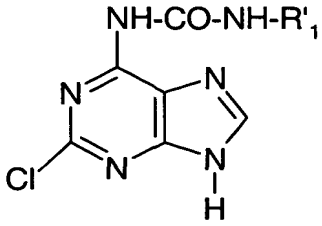


(M_2)

in which R_1' has the meaning indicated above; or
route 6: a compound of formula (XIX)is reacted with an isocyanate compound of formula (XXI):

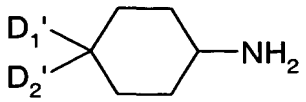
R_1'-N=C=O (XXI)

in which R_1' has the meaning indicated above,
in order to obtain a compound of formula (M_3):



(M_3)

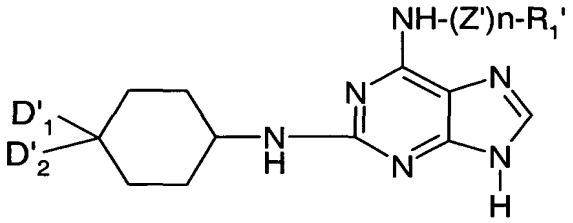
in which R_1' has the meaning indicated above,
which compounds of the formulae (VIII), (IX), (XII), (XIII), M_1, M_2 and M_3 can be reacted with a compound of formula (XIV):



(XIV)

in which D_1' and D_2' have the meanings indicated in claim 1 for D_1 and D_2, respectively, in which the possible reactive functional groups are optionally protected with protecting groups,

in order to obtain a compound of formula (I'):



(I')

in which R_1', R_3', D_1' and D_2' have the meanings indicated above and Z' has the meaning indicated in claim 1 for Z in which the possible reactive functional groups are optionally protected with protecting groups,

the compounds of formula (I') having the definition indicated in claim 1 for the compounds of formula (I) in which the possible reactive functional groups are optionally protected with protecting groups,

which compounds of formula (I') may be compounds of formula (I) and which, in order to obtain compounds (or other compounds) of formula (I), may, if desired and if necessary, be reacted according to one or more of the following conversion reactions, in any order:

a) a reaction for esterification of an acid functional group,

b) a reaction for saponification of an ester functional group to an acid functional group,

c) a reaction for oxidation of an alkylthio group to the corresponding sulfoxide or sulfone,

d) a reaction for conversion of a ketone functional group to an oxime functional group,

e) a reaction for reduction of the free or esterified carboxyl functional group to an alcohol functional group,

f) a reaction for conversion of an alkoxy functional group to a hydroxyl functional group, or, alternatively, of a hydroxyl functional group to an alkoxy functional group,

g) a reaction for oxidation of an alcohol functional group to an aldehyde, acid or ketone functional group,

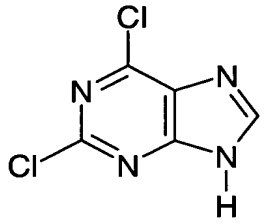
h) a reaction for conversion of a nitrile functional group to a tetrazolyl functional group,

i) a reaction for removal of the protecting groups which may carry the protected reactive functional groups,

j) a reaction for salification with an inorganic or organic acid or with a base in order to obtain the corresponding salt,

k) a reaction for resolution of the racemic forms to resolved compounds,
said compounds of formula (I) thus obtained being in all the possible isomeric forms, the racemic, enantiomeric and the diastereoisomeric forms.

10) A method for preparing a compound of formula (Id) as defined in claim 5, wherein a compound of formula (II):

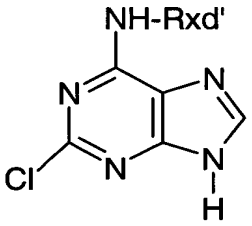


(II)

is reacted with a compound of formula (III):

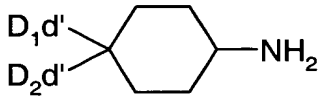
NH_2-Rxd' (III)

in which Rxd' has the definition set forth in claim 9 for Rxd, in which the possible reactive functional groups are optionally protected with protecting groups, in order to obtain a compound of formula (IV):



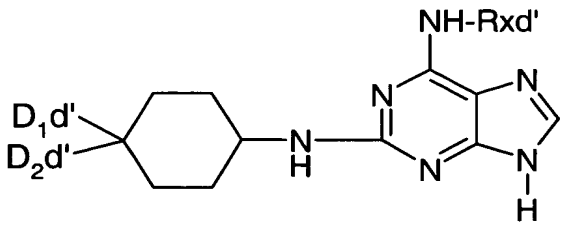
(IV)

in which Rxd' is as defined above,
which compound of formula (IV) may be reacted with a compound of formula (XXII):



(XXII)

in which D_1' and D_2' have the meanings indicated in claim 1 for D_1 and D_2, respectively, in which the possible reactive functional groups are optionally protected with protecting groups, in order to obtain a compound of formula (Id'):



(Id')

in which Rxd', D_1d' and D_2d' are as defined above,
the compounds of formula (Id') having the definition set forth in claim 1 for the compounds of formula (Id) in which the possible reactive functional groups are optionally protected with protecting groups,
which compounds of formula (Id') may be compounds of formula (Id) and which, in order to obtain compounds (or other compounds) of formula (Id), may, if desired and if necessary, be reacted in accordance with one or more of the following conversion reactions, in any order:
a) a reaction for esterification of an acid functional group,
b) a reaction for saponification of an ester functional group to an acid functional group,
c) a reaction for oxidation of an alkylthio group to the corresponding sulfoxide or sulfone,
d) a reaction for conversion of a ketone functional group to an oxime functional group,
e) a reaction for reduction of the free or esterified carboxyl functional group to an alcohol functional group,
f) a reaction for conversion of an alkoxy functional group to a hydroxyl functional group, or, alternatively, of a hydroxyl functional group to an alkoxy functional group,
g) a reaction for oxidation of an alcohol functional group to an aldehyde, acid or ketone functional group,
h) a reaction for conversion of a nitrile radical to a tetrazolyl radical,
i) a reaction for removal of the protecting groups which may carry the protected reactive functional groups,
j) a reaction for salification with an inorganic or organic acid or with a base in order to obtain the corresponding salt,
k) a reaction for resolution of the racemic forms to resolved compounds,
said compounds of formula (Id) thus obtained being in all the possible isomeric forms, the racemic, enantiomeric and the diastereoisomeric forms.

11) A pharmaceutical composition containing, as an active ingredient, at least one compound of claim 7, or a pharmaceutically acceptable addition salt thereof with an inorganic or organic acid or with an inorganic or organic base.

12) A method for the prevention or the treatment of fungal diseases comprising administering to a patient in need thereof an effective antifungal dose of a composition of claim 11.

13) The method of claim 12 wherein said fungal disease is selected from thme group consisting of candidiases, aspergilloses, histoplasmoses and coccidoidoses.

14) The method of claim 12 wherein said fungal disease is caused by Candida albicans.

15) The method of claim 12 wherein said fungal disease is systemic candidiasis.

16) An intermediate compound useful for the production of compounds of formula (I) as defined in claim 1, said intermediate being selected from the group consisting of the compounds of formulae (IX), (X), (XII), (XIII), M_1, M_2 and M_3.